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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)



Applicant's or agent's file reference REP07316WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/04894	International filing date (day/month/year) 12.11.2003	Priority date (day/month/year) 12.11.2002
International Patent Classification (IPC) or both national classification and IPC B41M5/26		
Applicant SHERWOOD TECHNOLOGY LIMITED ET AL.		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 7 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

- This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 26.05.2004	Date of completion of this report 07.12.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Markham, R Telephone No. +31 70 340-3512 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/GB 03/04894**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*):

Description, Pages

1-16 as originally filed

Claims, Numbers

1-18 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/GB 03/04894**

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	2,4,6,8-10,15,17,18
	No: Claims	1,3,5,7,11-14,16
Inventive step (IS)	Yes: Claims	
	No: Claims	1-18
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations

see separate sheet.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/04894

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1). Reference is made to the following documents:

- D1: US 4 237 212 A
- D2: GB 1 565 469 A
- D3: US 3 661 574 A
- D4: PATENT ABSTRACTS OF JAPAN
vol. 009, no. 187 (M-401), 3 August 1985
& JP 60 054888 A, 29 March 1985
- D5: US 4 217 409 A
- D6: US 2 910 377 A
- D7: US 3 028 255 A

2). Document D1 (column 4, line 9 to column 5, line 14; examples 12,20) describes a process for forming an image on a substrate, which comprises coating the substrate with a solution in an organic solvent (see especially example 20, alcohol) of a molybdenum amine compound and irradiating the coating. A method according to D1 comprises all the features of present claim 1, and so the present application does not satisfy the criterion set forth in Article 33(2) PCT because the subject-matter of present claim 1 lacks novelty in respect of the prior art as defined in the regulations (Rule 64(1)-(3) PCT).

3). Documents D2 (page 3, lines 23-111; example 8), D4 (abstract) and D5 (column 2, line 29 to column 5, line 17; column 6, lines 5-64; examples 12,20) also disclose a method analogous to that according to D1 and therefore the present application does not satisfy the criterion set forth in Article 33(2) PCT because the subject-matter of present claim 1 lacks novelty in respect of the prior art (each of D2,D4,D5) as defined in the regulations (Rule 64(1)-(3) PCT).

4). Document D3 (whole document) discloses an analogous process with a vanadium amine compound and so the subject-matter of present claim 1 lacks novelty in respect of the prior art (D3) as defined in the regulations (Rule 64(1)-(3) PCT).

5). The additional features of present dependent claims 3,5 and 7 are known from D1-D5 and therefore the subject-matter of these claims lacks novelty in respect of the

prior art (D1-D5) as defined in the regulations (Rule 64(1)-(3) PCT). The additional features of present dependent claims 6,8-10 are common in the art, and therefore the subject-matter of these claims lacks inventive step and so the present application does not satisfy the criterion set forth in Article 33(3) PCT because the subject-matter of present claims 6,8-10 lacks inventive step in respect of the prior art as defined in the regulations (Rule 64(1)-(3) PCT).

6). With respect to present claim 4, the substrate on which the amine is coated is not specified. None of D1,D2,D4 or D5 disclose a process in which the amine is a secondary or tertiary alkylamine in which each alkyl group has up to 12 carbon atoms and the amine has up to 24 carbon atoms, therefore subject-matter of present claim 4 is novel. In the absence of any other limiting features, the problem to be solved by the present claim 4 may therefore be regarded as the need to provide a different process of forming an image on a substrate. The solution proposed in claim 4 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reason. The specific alkylamines covered within the scope of present claim 4 are merely straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed.

7). Each of documents D1-D5 (passages cited above), D6 (example 10) and D7(whole document) disclose a coated substrate, wherein the coating is a substantially visible light transparent layer comprising an amine compound as defined in present claim 1. A coated substrate according to each of D1-D7 comprises all the features of present claim 11, and so the present application does not satisfy the criterion set forth in Article 33(2) PCT because the subject-matter of present claim 11 lacks novelty in respect of the prior art as defined in the regulations (Rule 64(1)-(3) PCT).

8). The additional features of present dependent claims 12 and 14 are known from D1-D7 and therefore the subject-matter of these claims lacks novelty in respect of the prior art (D1-D7) as defined in the regulations (Rule 64(1)-(3) PCT). The additional features of present dependent claim 15 is common in the art, and therefore the subject-matter of this claims lacks inventive step and so the present application does not satisfy the criterion set forth in Article 33(3) PCT because the subject-matter of present claim 15 lacks inventive step in respect of the prior art as defined in the regulations (Rule 64(1)-(3) PCT).

9). Re present claim 13, wherein the substrate is said to be "substantially" transparent

to visible light. This claim lacks clarity since the term "substantially" used therein is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claim unclear, Article 6 PCT. Even if one takes an ordinary definition of the above term (*i.e.*, meaning "to a considerable extent") the subject-matter of claim 13 lacks novelty in respect of the prior art (D1,D2 and D5) as defined in the regulations (Rule 64(1)-(3) PCT). Documents D1 (column 4, lines 24-27; examples 1-6,8-13,15,16,18,20), D2 (page 3, lines 38-41; examples 1,3,4,6,8) and D5 (column 4, lines 21-24; examples 1-6,8-13,15,16,18,20) each disclose a glass or polyester substrate coated with an amine compound as defined in present claim 1. Furthermore, it is specifically mentioned in example 1 of each of the three above documents that the background optical transmission density is 0.04. In other words, the coated substrate is substantially or to a considerable extent transparent. Hence the substrate itself must also be substantially or to a considerable extent transparent, and the subject-matter of claim 13 lacks novelty in respect of the prior art (D1,D2 and D5) as defined in the regulations (Rule 64(1)-(3) PCT).

10). Documents D1-D5 (passages cited above) describe a solution of an amine compound as defined in claim 1, and a thermoplastic polymer. A solution according to each of D1-D5 comprises all the features of present claim 16, and so the present application does not satisfy the criterion set forth in Article 33(2) PCT because the subject-matter of present claim 16 lacks novelty in respect of the prior art as defined in the regulations (Rule 64(1)-(3) PCT).

11). With respect to present claim 2, the most relevant prior art is that acknowledged by the applicant in the present description (page 2, lines 6-11), and describing a thermal/radiation imaging method involving molybdenum amine compounds applied to a substrate as a dispersion/suspension, D6 (example 10) and D7 (whole document). The subject-matter of present claim 2 differs in that in place of the solution in an organic solvent, an aqueous dispersion or suspension is used. The problem to be solved may be defined as a need to provide a different medium for the application of the metal-amine compound. The solution is provided by a method according to present claim 2. The solution proposed in claim 2 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons. Although a non-aqueous medium is employed in D6/D7, upon drying, the medium is no longer present. In fact, the non-aqueous media employed in D6/D7 appear to offer an advantage over an aqueous medium in ease of evaporation of the medium. An aqueous medium for the dispersion would appear to be an obvious design option,

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/04894

selected according to circumstances, and with predictable effect and consequently the present application does not satisfy the criterion set forth in Article 33(3) PCT because the subject-matter of present claims 2 lacks inventive step in respect of the prior art as defined in the regulations (Rule 64(1)-(3) PCT). Similar considerations apply to claims 2-10 insofar as they are dependent on claim 2 as in paragraph 5 above re lack of inventive step.

12). With respect to present claim 17, the most relevant prior art is represented by D1-D5, each describing a solution of an amine compound as defined in claim 1, and a thermoplastic polymer. The subject-matter of present claim 17 differs therefrom in that the solution comprises a photopolymerisable monomer in place of a thermoplastic polymer. While the present description (page 3, lines 15-17) mentions that this is another aspect of the present application, there are no other details of this aspect, such as what problem is solved thereby nor any evidence that it is effective for any purpose. The problem to be solved may be defined as a need to provide a different heat/radiation sensitive composition. The solution is provided by a composition according to present claim 17. The solution proposed in claim 17 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons. The features of present claim 17 comprise merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed above. Similar considerations apply to dependent claim 18.
